

Recent records of Black-necked Stork *Ephippiorhynchus asiaticus* in India

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The Black-necked Stork *Ephippiorhynchus asiaticus* ranges from Pakistan across the Indian subcontinent to Indochina, south through Indonesia and New Guinea to Australia. It is now a rare visitor to Pakistan and Bangladesh, a widespread but now rare, local and declining resident in India, a rare resident to Nepal and Sri Lanka, and a scarce resident in Myanmar (Rahmani 1989, BirdLife International 2001). In South-East Asia there have been catastrophic declines. In Thailand it was formerly quite widespread and fairly common, but it is now almost extinct (Lekagul and Round 1991). In Laos it was once a widespread non-breeding visitor throughout the country, but there have been very few recent records from only one site in the extreme south (Thewlis *et al.* 1998, Duckworth *et al.* 1999). In Cambodia it was previously fairly common (Delacour and Jabouille 1931) but there have been very few recent records (BirdLife International 2001). The total South and South-East Asian population has been estimated to be 1,000 individuals (Wetlands International 2003). In New Guinea the species ranges from southern Irian Jaya to the Fly River in Papua New Guinea. Much of the species's habitat remains largely undisturbed in Papua New Guinea and perhaps locally disturbed in Irian Jaya, suggesting that New Guinea is now an important refuge for the species, perhaps supporting over 1,000 individuals (D. Bishop *in litt.* to BirdLife International 2003). In Australia there is a relatively large population in the north, but it is rarer in the south. There are likely to have been recent declines as a result of drought, but there has been no contraction in range, even on the southern fringe of its distribution in New South Wales (S. Garnett *in litt.* to BirdLife International 2003). The total Australian and New Guinea population has been estimated to number 30,000 (Wetlands International 2003). Globally, the species is classified as Near Threatened (BirdLife International 2004).

In India, the Black-necked Stork is very widely but thinly distributed, with the north and north-west regions forming its main strongholds (Rahmani 1989). Populations appear to be declining in most parts of India except the Gangetic plains of Uttar Pradesh and north-western India, especially Gujarat, where populations are stable or marginally increasing. In Assam large numbers have been reported in Kaziranga National Park, Manas, Orang and Pobitara Wildlife Sanctuaries (Raj *et al.* 1989). Elsewhere, Black-necked Storks are present in very low numbers.

In India, ecological studies on Black-necked Stork have been conducted at Keoladeo National Park in Rajasthan, Dudwa National Park in Uttar Pradesh, and in Etawah and Mainpuri districts in Uttar Pradesh (Ishtiaq 1998, Maheswaran 1998, Maheswaran and Rahmani 2001, 2002, *in press a, b*, Sundar 2003). A detailed survey for the Black-necked Stork in the Indian subcontinent was carried out by Rahmani

(1989), who reported 141 sightings in 11 states between 1981 and 1989. Sundar and Kaur (2001) reported 30 Black-necked Storks in five states during a survey for Sarus Cranes in 1998–1999. In this paper we present the results of a questionnaire survey in 2002 to seek information on recent records and trends for the species in India.

METHODS

Over 4,500 questionnaires were sent to all the regular participants of the annual Asian Waterfowl Census (AWC), Indian members of the Bombay Natural History Society (BNHS), and BNHS's Indian Bird Conservation Network (IBCN) in October 2002. The questionnaires asked for details of wetland sites (area, habitat, protection, threats), details of any sightings of Black-necked Storks including the number of males and females (distinguished by iris colour) and juveniles, whether storks were seen throughout the year, and estimated population trends at the site (increasing, decreasing, stable, unknown).

We also included additional information from Wetlands International's Asian Waterfowl Census for 2003 (although these records did not distinguish the sex or age of Black-necked Storks). We combined duplicate or multiple records from the same sites if they dated from the same month. We took the most pessimistic trend assessment where different assessments were received for the same site. All but two records received were since 1996; single records in Karnataka in 1988 and Gujarat in 1993 were omitted from the analysis. Four other records were omitted because they included no date or inadequate site details.

RESULTS AND DISCUSSION

The questionnaire survey is likely to have suffered from a number of biases, and the results cannot be taken to be a comprehensive and objective assessment of the current population and distribution of Black-necked Storks. In particular, no information was received from a number of known sites for the species. However, the survey provided a useful dataset of recent observations of the species that can inform status assessments. In total, 45 completed questionnaires were received, giving details of 187 Black-necked Stork records from 59 sites in 13 states across India (Fig. 1; Table 1). In total, 22% of the sites were in Gujarat, 20% in Uttar Pradesh, 14% in Assam, and smaller numbers in other states (Table 1). More than 95% of sightings were from shallow freshwater wetlands, lakes and reservoirs, but storks were also reported from coastal habitats in



Figure 1. Map showing the distribution (black circles) of Black-necked Storks in India in 1996-2003. Sites numbered: 1. Kaziranga NP; 2. Orang NP; 3. Jengdia Beel; 4. Misamari Beel; 5. Pobitara WS; 6. Vikramshira; 7. Topchanchi Lake; 8. Bentnsalayan Gaunj; 9. Khijadia BS; 10. Baskarapara; 11. Mohamadpura; 12. Bakoda Creek; 13. Jakhau Creek; 14. Chakrakala Salt Pans; 15. Thane Creek; 16. Pawana Dam; 17. Baslapur Reservoir; 18. Cotigao WS; 19. Ravirala Lake; 20. Chambal WS; 21. Bhitarkanika NP; 22. Patna BS; 23. Soor Sarovar BS; 24. Sandi BS; 25. Baghmarital; 26. Dudwa NP; 27. Jhadital; 28. Okhla BS; 29. Asan Barrage; 30. Haridwar; 31. Ramganga; 32. Tumeria Reservoir; 33. Mahananda Barrage; 34. Chapramari WS; 35. Basai; 36. Bhindawas WS; 37. Bilwali Tank; 38. Rajaji NP.

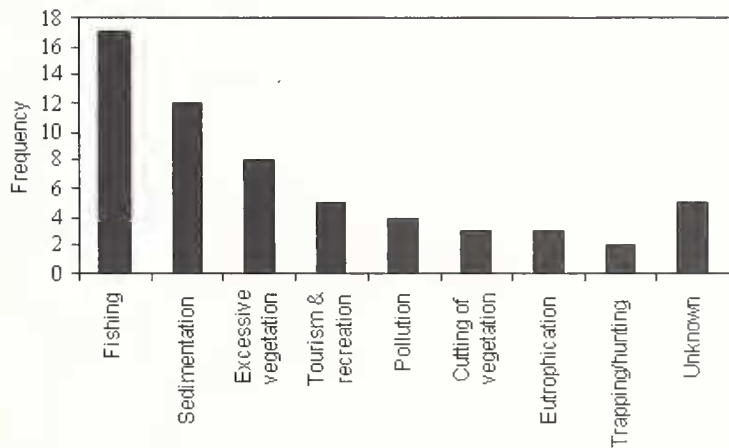


Figure 2. Frequency of threats to sites for Black-necked Storks in India in 1996-2003.

Gujarat and mangroves in Orissa. Of the 72 storks for which the sex was determined, 57% were male and 43% were female. Only 15 juveniles (20% of records) were reported, and only four nests were seen: two each in Uttar Pradesh and Gujarat. At only 44% of sites (26) were storks reported to be seen throughout the year; these sites were largely located in northern Uttar Pradesh and Gujarat. Year-round observations may indicate long-term suitability of habitat conditions at particular sites, whereas at other sites the habitat may only be seasonally suitable.

At 54% of sites (32) the Black-necked Stork population was estimated to be declining, with 19% (11) judged to have a stable population, 0% increasing, and 27% (16) with unknown trend. Almost half (45%) of the sites with stable populations were in Dudwa National Park, Uttar Pradesh. Judgements of population trends are highly subjective, and we have no data on each respondent's duration of experience at each site. However, these results give great cause for concern for the conservation of Black-necked Storks in

Table 1. Records of Black-necked Stork reported in India during 1996–2003.

Site	Location	District	Date	No. storks	Population trend	Population seen year-round
Assam						
Agrakoli (Kaziranga NP)	26°37'N 93°18'E	Goalaghat	30 January 2002	5	Stable	Yes
Daflangbil (Kaziranga NP)	26°37'N 93°18'E	Goalaghat	26 January 2003	1	Stable	Yes
Genda beel (Orang NP)	26°34'N 92°25'E	Darrang	2 February 2003	1	Declining	Yes
Jengdia beel	26°16'N 91°46'E	Kamrup	26 January 2003	2	Declining	No
Misamari beel	26°48'N 92°35'E	Jorhat	25 January 2003	3	Unknown	No
Pobitara WS	26°12'N 90°03'E	Morigaon	21 January 2003	6	Declining	No
Jugdol (Pobitara WS)	26°12'N 90°03'E	Morigaon	20 January 2001	6	Stable	Yes
Tamulidova (Pobitara WS)	26°12'N 90°03'E	Morigaon	19 January 2001	8	Stable	Yes
Bihar						
Vikramshira	25°15'N 87°00'E	Bhagalpur	16 January 2003	2	Declining	No
Jharkhand						
Topchanchi lake	23°53'N 86°12'E	-	26 January 2000	1	Declining	No
Gujarat						
Betnsalaya gaunj	22°15'N 70°00'E	Jamnagar	9 February 2002	2	Unknown	No
Khijadiya BS	22°30'N 70°15'E	Jamnagar	16 August 2001	4	Stable	No
			15 August 2002	1	Unknown	Yes
			12 October 2002	3	Unknown	Yes
			21 January 2003	1	Unknown	Yes
Tata salt pans	22°30'N 70°15'E	Jamnagar	13 March 2001	1	Unknown	No
			19 November 2002	2	Declining	Yes
Poshitara	22°30'N 70°15'E	Jamnagar	16 October 2001	1	Unknown	No
Baskarapara	22°42'N 71°40'E	Surendra Nagar	8 March 2003	3	Unknown	No
Mohamadpura	22°30'N 73°30'E	Vadodara	10 February 1999	1	Unknown	No
			24 December 1999	1	Unknown	No
			20 January 2002	2	Unknown	No
			3 February 2003	2	Unknown	No
Bakoda creek	23°35'N 70°00'E	Kutch	2 February 2002	1	Declining	No
Jakhav creek	23°13'N 68°43'E	Kutch	22 May 2002	1	Declining	Yes
Ganganagar	23°35'N 70°00'E	Kutch	25 February 2002	1	Unknown	Yes
Jakhau seashore	23°35'N 70°00'E	Kutch	25 May 2002	1	Declining	Yes
Kanka creek	23°35'N 70°00'E	Kutch	26 January 2000	1	Declining	Yes
Sangi cement company	23°35'N 70°00'E	Kutch	31 January 2002	1	Declining	Yes
Chakarakala salt pans	22°34'N 68°56'E	Jamnagar	5 January 2002	4	Declining	Yes
Goa						
Cotigao WS	14°59'N 74°12'E	Canacona	17 January 2001	1	Unknown	No
Maharashtra						
Pawana dam	18°44'N 73°28'E	Pune	15 December 2001	5	Unknown	No
Baslapur reservoir	20°56'N 77°48'E	Amravati	22 January 2003	3	Unknown	No
Thane creek	19°12'N 72°58'E	Thane	12 January 2003	2	Unknown	No
Andhra Pradesh						
Ravirala lake	17°13'N 78°38'E	Ranga Reddy	12 January 2000	6	Declining	No
Madhya Pradesh						
Chambal WS	26°10'N 76°55'E	Morena	1 January 1999	4	Stable	Yes
Bilawali tank	21°52'N 76°19'E	-	10 January 1999	12?	Unknown	Unknown
Talgaon tank	-	-	13 January 2000	1	Unknown	Unknown
Dokri kheda	-	-	20 February 1999	2	Unknown	Unknown
Orissa						
Bhitarkanika NP	20°38'N 86°56'E	Baleswar-Cuttak	15 January 1998	2	Declining	Yes
Bhitarkarma	-	-	25 January 2003	1	Declining	No
Tampara backwaters	-	-	15 January 1997	9	Declining	No
Uttar Pradesh						
Patna BS	27°34'N 78°45'E	Etah	5 August 2002	2	Unknown	Yes
Soor Sarovar BS	27°00'N 77°45'E	Agra	14 November 2002	2	Declining	Yes
			27 January 2003	6	Unknown	Unknown
Sandi BS	27°18'N 79°57'E	Hardoi	18 November 2002	4	Declining	No
Baghmarital	27°57'N 80°46'E	Lakhimpur-Kheri	7 May 2002	2	Declining	No
Kakrakatal (Dudwa NP)	28°18'N 80°28'E	Lakhimpur-Kheri	13 May 1996	4	Stable	Yes

Site	Location	District	Date	No. storks	Population trend	Population seen year-round
Badhital (Dudwa NP)	28°18'N 80°28'E	Lakhimpur-Kheri	13 May 1996	4	Stable	Yes
Nagratal (Dudwa NP)	28°18'N 80°28'E	Lakhimpur-Kheri	15 May 1996	2	Stable	Yes
Muthnatal (Dudwa NP)	28°18'N 80°28'E	Lakhimpur-Kheri	15 February 1996	5	Stable	Yes
Banketal (Dudwa NP)	28°18'N 80°28'E	Lakhimpur-Kheri	12 May 1996	4	Stable	Yes
Chaltua bridge	27°57'N 80°46'E	Lakhimpur-Kheri	15 January 2003	2	Unknown	Unknown
Jhadital (Kishanpur WS)	28°23'N 80°21'E	Lakhimpur-Kheri	21 November 2002	2	Declining	No
Okhla BS	28°34'N 77°16'E	Noida	23 March 2003	1	Declining	No
Uttaranchal						
Asan barrage	30°26'N 77°42'E	Dehradun	7 May 1997	2	Unknown	No
Near Haridwar	29°58'N 78°10'E	Haridwar	3 December 2002	2	Declining	No
Rajaji NP	29°57'N 78°12'E	Haridwar	25 January 2003	3	Declining	No
Ramganga	29°33'N 78°54'E	-	21 January 2002	2	Declining	No
Tumeria reservoir	28°55'N 79°42'E	Udham Singh Nagar	22 January 2002	2	Declining	Yes
Nanakmata reservoir	-	-	21 January 2002	2	Declining	No
West Bengal						
Mahananda barrage	26°30'N 88°30'E	Jalpaiguri	8 February 2002	6	Declining	No
Garati beel	-	Jalpaiguri	20 January 1997	1	Declining	Unknown
Chapramari WS	26°52'N 88°55'E	Jalpaiguri	22 January 1997	2	Declining	Yes
Rasikbill	-	Coochbehar	23 January 2003	2	Declining	No
Haryana						
Basai	28°28'N 77°02'E	Gurgaon	10 January 2003	2	Declining	No
Bhindawas WS	28°32'N 76°33'E	Jhajjar	9 January 2001	2	Declining	Unknown
			10 January 2003	2	Unknown	Unknown

Key: NP = National Park; WS = Wildlife Sanctuary; BS = Bird Sanctuary; '-' = coordinates unavailable.

India. Evidence that declines are occurring is also provided by comparing data from the Asian Waterfowl Census. The number of Black-necked Storks recorded in the censuses totalled 100 in nine states in 1987–1989 (Rahmani 1989), 234 in 16 states in 1994–1996 (Lopez and Mundkur 1997), but only 18 in three states in 2000 (Rahmani *et al.* 2002), despite apparently constant effort. However, when we compared the number of storks recorded during Rahmani's (1989) survey and the present survey, only marginal changes in numbers are evident, apart from one area (Dudwa National Park) where significantly larger numbers were recorded in the present survey. This could be because only a small number of sites were visited during both the surveys (Table 2). Even though we did not receive any questionnaires from Rajasthan and Etawah and Mainpuri districts of Uttar Pradesh, 12 pairs in Keoladeo National Park,

Rajasthan (Ishtiaq 1998) and 21 territorial pairs in two districts of Uttar Pradesh (Sundar 2003) were seen during the period.

Of the 59 sites from which storks were reported, 39% (23) have some form of protected status, while the remainder are unprotected. Fishing by local people was cited as the commonest threat to the species, with sedimentation affecting wetland quality being the second most important (Fig. 2). The species is largely dependent on freshwater wetlands, but these are under great pressure from expanding human populations in India. In addition, the species suffers from collection of eggs in at least parts of its range (e.g. Assam), and hence would benefit from moving from Schedule IV to Schedule I of the Indian Wildlife (Protection) Act (1972).

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Table 2. Number of Black-necked Storks recorded from sites surveyed in both 1981–1989 (Rahmani 1989) and 1996–2003 (this study).

Site	1981–1989	1996–2003
Assam		
Orang NP	4	1
Kaziranga NP	5	6
Gujarat		
Jakhau Seashore	1	1
Orissa		
Bhitarkhanika NP	1?	2
Uttar Pradesh		
Dudwa NP	5–6	19
Okhla BS	2	1

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Eight birds new to DPR Korea

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Between July 2000 and March 2004, during frequent recreational birding in Pyongyang (c.39°05'N 125°45'E), the capital city of the Democratic People's Republic of (DPR) Korea, I found six bird taxa apparently new to the country, with a seventh at Hyangsan (c.40°05'N 126°10'E). Tomek (1999–2002) reviewed almost all bird records available from DPR Korea; the chief omission was the so-far unpublished collection of about 1,200 bird skins by Sten Bergman during 1935–1936. P. Ericson (*in litt.* 2003) has kindly provided details of this collection. Additionally, past records of one further species not generally included within the avifauna of DPR Korea are presented here. Except where noted, birds were observed with x8 or x10 binoculars and, where appropriate, a x15–45 zoom telescope.

COMMON TEAL *Anas crecca carolinensis*

On 18 January 2003, a male 'Green-winged Teal' was observed in a flock of approximately 270 Common Teals, all other males (c.50% of flock) being *A. c. crecca*. The *A. c. carolinensis* appeared largely as *A. c. crecca*, but was readily identified by its vertical white bar on the breast-side, falling within the grey area. The head looked plainer than in *A. c. crecca*, through the apparent absence of yellow lines between the orange and metallic green patches. The bird lacked male *A. c. crecca*'s horizontal white line along the wing; however,

this patch is often concealed in *A. c. crecca*. It was observed on the Taedong river by the east shore of Rungra islet, at 110–140 m range for 30 minutes in excellent mid-morning light. It was seen again, under generally similar conditions, on 21, 25, 28 and 31 January 2003. I was then absent until mid-March. By then, teal numbers on this stretch of river had dropped to 100–150, and the *A. c. carolinensis* could not be found. It, or another similar bird, was seen well in the same stretch of river on 29 February 2004; the only date this flock was checked carefully between 28 November 2003 and 13 March 2004. On 28 January 2003, it was filmed, in rather harsh light, by the Korean Central Broadcasting Committee, for broadcast on national television.

This race, nowadays considered by some authorities as a separate species (e.g. Sangster *et al.* 2001), is a vagrant to the south of Korea (Won 1996, Lee *et al.* 2000). It could well be commoner: females cannot easily be identified in the field, and even males may be overlooked in distant teal flocks. It is the second commonest Nearctic duck to cross the Atlantic, hundreds having been recorded in the British Isles alone (Lewington *et al.* 1991). Occurrence at the same site in successive winters, presumed to indicate returning by the same individual birds, is not infrequent in Britain (Fraser *et al.* 1999).